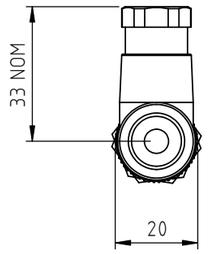
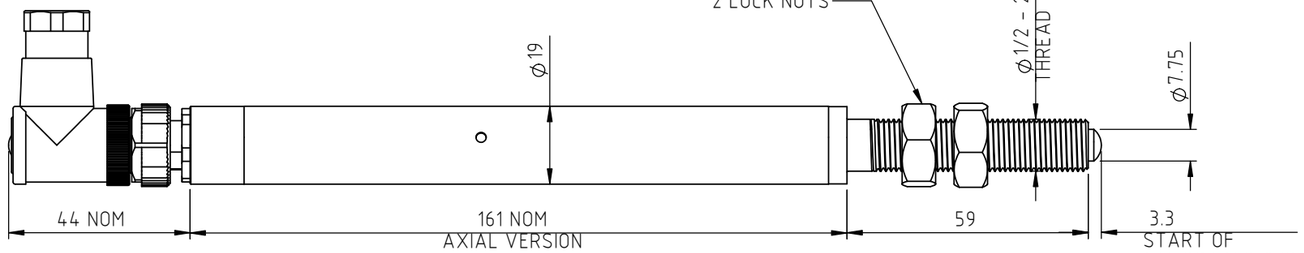
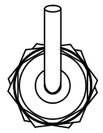


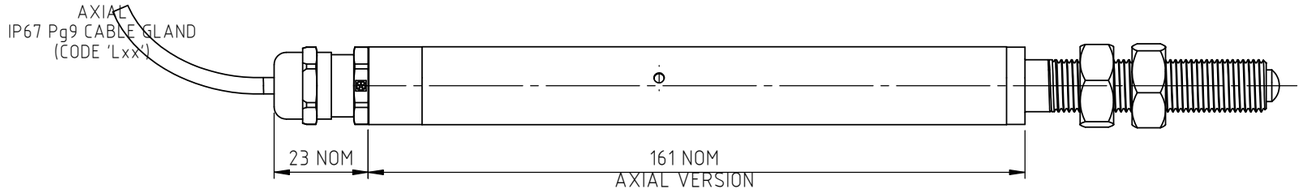
AXIAL
IP67 M12 CONNECTOR
IEC 61076-2-101
(CODE 'J')

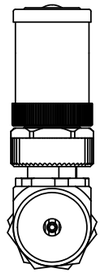


DIRECTION OF TRAVEL →

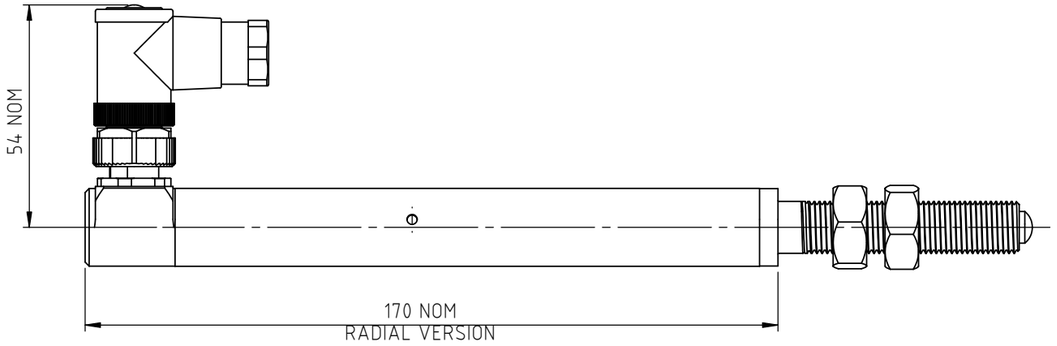


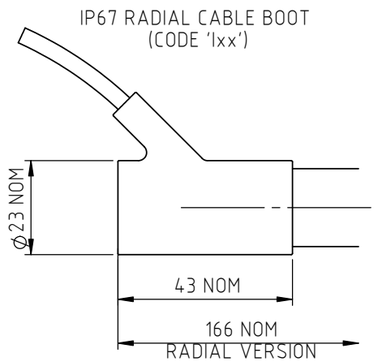
AXIAL
IP67 Pg9 CABLE GLAND
(CODE 'Lxx')

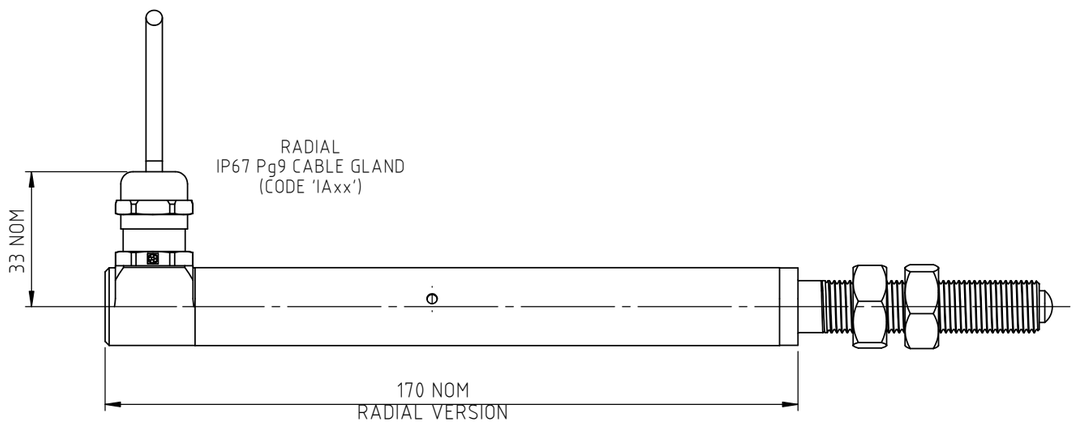




RADIAL
IP67 M12 CONNECTOR
IEC 61076-2-101
(CODE 'K')







ELECTRICAL OPTIONS/ SPECIFICATIONS

OUTPUT	SUPPLY
A 0.5 - 4.5V RATIOMETRIC	5V
C 0.5 - 9.5V	24V
G 0.5 - 4.5V	24V
H 4 - 20mA	24V

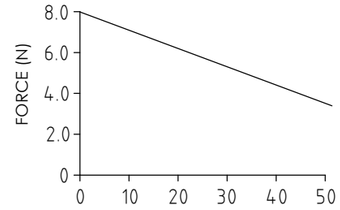
SUPPLY CURRENT 12mA TYP. 20mA MAX. PLUS O/P CURRENT

CONNECTIONS;	CABLE	CONNECTOR
+Ve	RED	:1
0V	BLACK	:3
OUTPUT	WHITE	:2
BODY	SCREEN	:4

CABLE; 3-CORE 0.2mm², O/A SCREEN, PUR JACKET Ø4mm
SUPPLIED WITH 50cm OR REQUIRED LENGTH IN cm. e.g. 'L50'
CONNECTORS; MAXIMUM CONDUCTOR CROSS SECTION 0.25mm²

RANGE OF DISPLACEMENT FROM 0-2mm TO 0-50mm IN INCREMENTS OF 1mm e.g.36.
BODY MATERIAL:- STAINLESS STEEL.

SPRING LOADED PLUNGER WILL RETRACT FLUSH WITH NOSE AND EXTEND A FURTHER 2mm BEYOND THE END OF CALIBRATED TRAVEL



SPRING FORCE VS STROKE

DRAWINGS NOT TO BE CHANGED WITHOUT REFERENCE TO THE CHANGE PROCEDURE.
CHANGES TO PARTS USED IN INTRINSICALLY SAFE PRODUCT MUST BE APPROVED BY THE AUTHORISED PERSON.
THIS IS AN UNCONTROLLED PRINT AND WILL NOT BE UPDATED.

REV	CHANGE HISTORY	DR'WN	DATE	CHK'D
M	SINGLE PIECE RADIAL END CAP ADDED RAN1167	ASC	23/09/2021	ASC

Positek

APPROVED BY	REV		
RDM	M		X ±0.4 X.X ±0.2 X.XX ±0.1 DIMS mm

DESCRIPTION
P112 LIPS GAUGE HEAD
POSITION SENSOR

SCALE	DRAWING NUMBER
2:3 A3	P112-11 SHEET 1 OF 1

P112 GAUGE HEAD POSITION SENSOR

Position feedback for industrial and scientific applications

- **Gauge head positioning for industrial and scientific applications**
- **Non-contacting inductive technology to eliminate wear**
- **Travel set to customer's requirement**
- **Compact 19 mm diameter body**
- **Sealing to IP67**

As a leading designer and manufacturer of linear, rotary, tilt and intrinsically safe position sensors, Positek® has the expertise to supply a sensor to suit a wide variety of applications.
Our P112 is an affordable, durable high-accuracy sensor for gauge head positioning in industrial and scientific applications. The P112, like all Positek® sensors, provides a linear output proportional to travel. Each sensor is supplied with the output calibrated to the travel required by the customer, from 5mm to 50mm and with full EMC protection built in.
It is particularly suitable for OEMs seeking good sensor performance for arduous applications such as industrial machinery where cost is important. Overall performance, repeatability and stability are outstanding over a wide temperature range. The sensor is very robust, the body and plunger being made of stainless steel for long service life and environmental resistance.
The plunger is spring loaded with a domed end. The P112 is easy to install with a long ½ inch UNF mounting thread and is supplied with two lock nuts for positioning. Environmental sealing is to IP67.

SPECIFICATION

Dimensions	
Body diameter	19 mm
Body Length (excluding thread)	
Axial version	160.7 mm
Radial boot version	166 mm
Radial version	169.5 mm
Mounting Thread Length	59 mm
Plunger extension	calibrated travel + 3.3 mm, OD 7.8 mm
For full mechanical details see drawing P112-11	
Spring Force	1.5 - 4.5 N approx.
Independent Linearity	≤ ± 0.25% FSO @ 20°C
Temperature Coefficients	< ± 0.01%/°C Gain & < ± 0.01%FS/°C Offset
Frequency Response	> 10 kHz (-3dB)
Resolution	Infinite
Noise	< 0.02% FSO
Environmental Temperature Limits	
Operating	-40°C to +125°C standard -20°C to +85°C buffered
Storage	-40°C to +125°C
Sealing	IP67
EMC Performance	EN 61000-6-2, EN 61000-6-3
Vibration	IEC 68-2-6: 10 g
Shock	IEC 68-2-29: 40 g
MTBF	350,000 hrs 40°C Gf
Drawing List	
P112-11	Sensor Outline

3D models, step or .igs format, available on request.

Do you need a position sensor made to order to suit a particular installation requirement or specification? We'll be happy to modify any of our designs to suit your needs - please contact us with your requirements.

For further information please contact:
www.positek.com sales@positek.com
Tel: +44(0)1242 820027 fax: +44(0)1242 820615
Positek, Andoversford Industrial Estate, Cheltenham GL54 4LB. U.K.

P112 GAUGE HEAD POSITION SENSOR

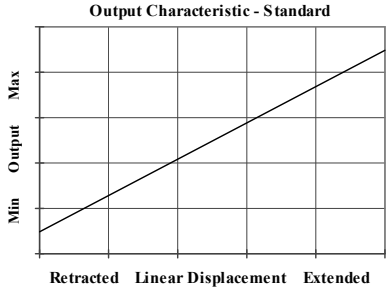
Position feedback for industrial and scientific applications

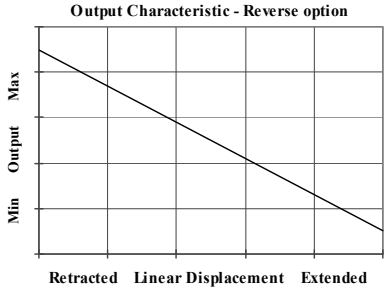
How Positek's technology eliminates wear for longer life

Positek's Inductive technology is a major advance in displacement sensor design. Our displacement transducers have the simplicity of a potentiometer with the life of an LVDT/RVDT.
Our technology combines the best in fundamental inductive principles with advanced micro-electronic integrated circuit technology. A Positek sensor, based on simple inductive coils using Positek's ASIC control technology, directly measures absolute position giving a DC analogue output signal. Because there is no contact between moving electrical components, reliability is high and wear is eliminated for an exceptionally long life.
It also overcomes the drawbacks of LVDT technology – bulky coils, poor length-to-stroke ratio and the need for special magnetic materials, no requirement for separate signal conditioning.
We also offer a range of ATEX-qualified intrinsically-safe sensors.

P112 .	a	b	c	d
	Displacement	Output	Connections	Z-code

a **Displacement**		**Value**
Factory set to any length from 0-5 mm to 0-50 mm (e.g. 0-36 mm).		**36**
b **Output**		
Supply V_{dc} (tolerance)	**Output**	**Code**
+5V (4.5 - 5.5V)	0.5 - 4.5V (ratiometric with supply)	**A**
+24V nom. (13 - 28V)	0.5 - 9.5V	**C**
+24V nom. (9 - 28V)	0.5 - 4.5V	**G**
+24V nom. (13 - 28V)	4 - 20mA 3 wire Source	**H**
Supply Current: 'A' 10mA nominal, 12mA max. 'G' 12mA nominal, 15mA max. 'H' 32mA nominal, 35mA max.		
c **Connections**		**Code**
Cable boot radial IP67		**Ixx**
Cable gland radial IP67 Pg9, metal		**IAxx**
Connector axial IP67 4 pin M12 IEC 61076-2-101, nylon		**J**
Connector axial IP67 4 pin M12 IEC 61076-2-101, nylon pre-wired		**Jxx**
Connector radial IP67 4 pin M12 IEC 61076-2-101, nylon		**K**
Connector radial IP67 4 pin M12 IEC 61076-2-101, nylon pre-wired		**Kxx**
Cable gland axial IP67 Pg9, metal		**Lxx**
Specify required cable length **'xx'** in cm. e.g. L2000 specifies axial cable gland with 20 m of cable, 50 cm supplied as standard.		
d **Z-code** (optional)		**Code**
≤± 0.1% FSO @20°C Independent Linearity 0 - 10 mm min.		**Z650**





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Positek, Andoversford Industrial Estate, Cheltenham GL54 4LB. U.K.

Installation Information

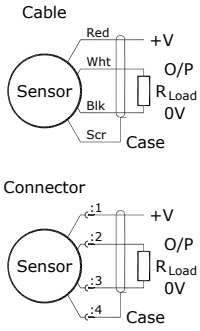
P112 GAUGE HEAD POSITION SENSOR

Output Option	Output Description:	Supply Voltage: V_s (tolerance)	Load resistance: (include leads for 4 to 20mA O/Ps)
A	0.5 - 4.5V (ratiometric with supply)	+5V (4.5 - 5.5V)	≥ 5kΩ
C	0.5 - 9.5V	+24V nom. (13 - 28V)	≥ 5kΩ
G	0.5 - 4.5V	+24V nom. (9 - 28V)	≥ 5kΩ
H	4 –20mA	+24V nom. (13 - 28V)	300Ω max.

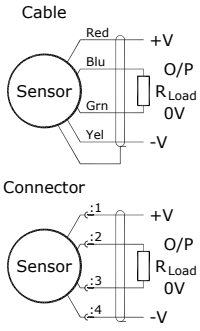
Not all output options available - see product datasheet for full options list

Connector Pinout
(Front View)
M12 IEC

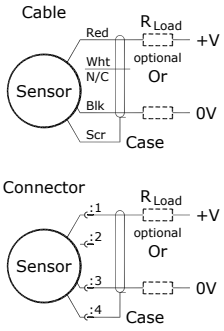
'A', 'C', 'G' & 'H'



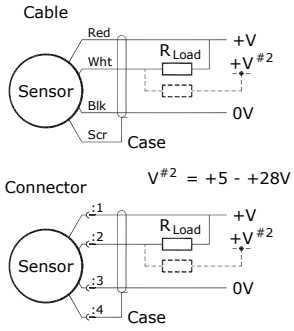
'B' & 'D'



'E'

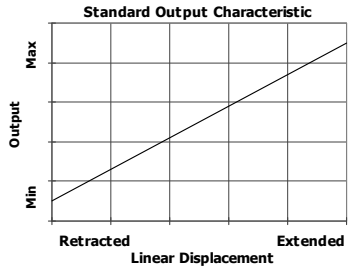


'F'



Mechanical Mounting: Via ½"x20 UNF mounting thread, adjust sensor position and lock in place using lock nuts provided. Maximum tightening torque: 10Nm.

Output Characteristic: Plunger is extended 3.3 mm from end of body at start of normal travel. The output increases as the plunger extends from the sensor body, the calibrated stroke is between 5 mm and 50 mm.



Warning - The M12 IEC connector may be rotated for purposes of convenient orientation of the connector and cable, however rotating the connector more than one complete revolution is not recommended. **Repeated rotation of the connector will damage the internal wiring!**

Incorrect Connection Protection levels:-

A **Not protected** – the sensor is **not** protected against either reverse polarity or over-voltage. The risk of damage should be minimal where the supply current is limited to less than 50mA.

C & G Supply leads diode protected. Output must not be taken outside 0 to 12V.

H Supply and output lead diode protected. Do take output negative of 0 volts.

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